What is claimed is:

1. A method for making a transformed at least one plant cell comprising:
   a) providing at least one cell from a plant, and
   b) inoculating a plant cell with at least one *Agrobacterium*.

2. The method of claim 1, wherein said plant is a freshwater monocot plant.

3. The method of claim 1, wherein said plant is a freshwater wetland monocot plant.

4. The method of claim 1, wherein said plant is a freshwater emergent wetland monocot plant.

5. The method of claim 1, wherein said plant is selected from the groups consisting of *Carex*, *Scirpus*, *Juncus* and *Typha*.

6. The method of claim 1, wherein said plant is selected from the group consisting of *Juncus effusus*, *Juncus acuminatus*, *Carex lurida*, *Typha latifolia*, *Typha angustifolia* and *Scirpus polyphyullus*.

7. The method of claim 1, wherein said at least one cell is from a plant, a portion of a plant or from a callus.

8. The method of claim 1, wherein said at least one *Agrobacterium* is a disarmed *Agrobacterium*.

9. The method of claim 8, wherein said disarmed *Agrobacterium* comprises a vector.

10. The method of claim 9, wherein said vector is derived from *Agrobacterium*.

11. The method of claim 9, wherein said vector comprises expression control sequences operative in said plant.

12. The method of claim 9, wherein said vector comprises at least one gene of interest.

13. The method of claim 12, wherein said at least one gene of interest does not naturally occur in said plant.

14. The method of claim 12, wherein said at least one gene of interest comprises at least one reporter gene.

15. The method of claim 14, wherein said at least one reporter gene comprises GUS.

16. The method of claim 12, wherein said at least one gene of interest comprises a bioremediation gene.

17. A cell made by the method of claim 1.

18. The cell of claim 17, wherein said cell expresses the gene of interest.

19. A population of cells made by the method of claim 1.

20. The population of cells of claim 19, wherein at least one cell expresses the gene of interest.

21. The population of cells of claim 19, wherein said population of cells forms a callus.

22. The population of cells of claim 19, wherein said population of cells comprises a plant or a seed.

23. A method of transforming a plant cell using homologous recombination, comprising:

a) providing a plant cell:

b) inserting a vector into said plant cell, wherein said vector comprises a nucleic acid sequence of interest flanked by flanking nucleic acid

sequences having substantial identity with a targeted region of said plant cell;

wherein said plant cell expresses said nucleic acid sequence of interest.

24. The method of claim 23, wherein said plant cell comprises an nucleic acid sequence that does not naturally occur in said plant cell.

25. The method of claim 23, wherein said targeted region comprises a reporter gene.

26. The method of claim 23, wherein said vector does not comprise control sequences.

27. The method of claim 23, wherein said nucleic acid sequence of interest encodes a bioremediation gene.

28. A cell made by the method of claim 23.

29. The cell of claim 28, wherein said cell expresses the gene of interest.

30. A population of cells made by the method of claim 23.

31. The population of cells of claim 30, wherein at least one cell expresses the gene of interest.

32. The population of cells of claim 30, wherein said population of cells forms a callus.

33. The population of cells of claim 30, wherein said population of cells comprises a plant or a seed.

34. A method for regenerating a plant, comprising:

a) providing sample of a plant;

b) inducing shoot development from said sample; and

c) inducing root development from said sample.

35. The method of claim 34, wherein said plant is a freshwater monocot plant.

36. The method of claim 34, wherein said freshwater monocot plant is a freshwater wetland monocot plant.

37. The method of claim 34, wherein said freshwater wetland monocot plant is a freshwater emergent wetland monocot plant.

38. The method of claim 34, wherein said plant is selected from the group consisting of *Carex*, *Scirpus*, *Juncus* and *Typha*.

39. The method of claim 34, wherein said plant is selected from the group consisting of *Juncus effusus*, *Carex lurida* and *Scirpus polyphyllus*.

40. The method of claim 34, wherein said sample comprises a portion of said plant, a callus from said plant or at least one cell from said plant.

41. The method of claim 34, wherein said sample comprises at least one transgenic plant cell.

42. The method of claim 34, wherein said sample comprises a seedling from said plant.

43. The method of claim 34, wherein said inducing shoot development comprises culturing said tissue in the presence of at least one plant growth regulator.

44. The method of claim 43, wherein said plant growth regulator comprises at least one cytokinin.

45. The method of claim 44, wherein said at least one cytokinin is selected from the group consisting of N6-benzyladenic (BA), N6 (2-isopentenyl)-adenine (2iP), 1-phenyl-3-(1,2,3-thiodiazol-5-yl)urea (thidazuron) and 6-furfurylaminopurine (kinetin).

46. The method of claim 34, wherein said inducing shoot development comprises culturing said tissue in light.

47. The method of claim 34, wherein said inducing root development comprises culturing said tissue in the presence of at least one plant growth regulator.

48. The method of claim 47, wherein said plant growth regulator comprises at least one auxin.

49. The method of claim 48, wherein said at least one auxin is selected from the group consisting of napthaleneacetic acid (NAA), 2,4-dichlorophenoxyacetic acid (2,4-D) and 4-amino-3,5,6-tricholoropicolinic acid (picloram).

50. The method of claim 43, wherein said culturing further comprises exposing said tissue to at least one of the group consisting of charcoal, citric acid, ascorbic acid.

51. The method of claim 34, wherein said inducing root development comprises culturing said tissue in the light.

52. The method of claim 34, further comprising cultivating a mature plant.

53. The method of claim 34, further comprising obtaining seeds from said mature plant.

54. A plant made by the method of claim 34.

55. A seed from a plant of claim 54.

56. A method for regenerating a plant, comprising:

a) providing a sample of a plant:

a) forming a callus from said sample: and

b) inducing shoot development and inducing root development from said callus.

57. The method of claim 56, wherein said plant is a freshwater monocot plant.

58. The method of claim 56, wherein said freshwater monocot plant is a freshwater wetland monocot plant.

59. The method of claim 56, wherein said freshwater wetland monocot plant is a freshwater emergent wetland monocot plant.

60. The method of claim 56, wherein said plant is selected from the group consisting of *Carex*, *Scirpus*, *Juncus* and *Typha*.

61. The method of claim 56, wherein said plant is *Typha latifolia*.

62. The method of claim 56, wherein said sample comprises a germinated seedling.

63. The method of claim 62, wherein said germinated seedling was germinated *in vitro*.

64. The method of claim 56, wherein said forming comprises culturing said sample in the presence of at least one plant growth regulator.

65. The method of claim 64, wherein said at least one plant growth regulator comprises at least one auxin.

66. The method of claim 65, wherein said at least one auxin is selected from the group consisting of 2,4-D, picloram and NAA.

67. The method of claim 56, wherein said forming step is carried out in the dark.

68. The method of claim 56, wherein said inducing shoot development comprises culturing said callus in the presence of at least one plant growth regulator.

69. The method of claim 68, wherein said at least one plant growth regulator is at least one cytokinin.

70. The method of claim 69, wherein said at least one cytokinin is selected from the group consisting of BA, 2iP, thidiazuron and kinetin.

71. The method of claim 56, wherein said inducing shoot development takes place in the light.

72. The method of claim 71, wherein said light is continuous.

73. The method of claim 56, wherein said inducing root development comprises culturing said callus in the presence of at least one plant growth regulator.

74. The method of claim 73, wherein said at least one plant growth regulator is at least one cytokinin.

75. The method of claim 74, wherein said at least one cytokinin is selected from the group consisting of BA, 2iP and kinetin.

76. The method of claim 56, wherein said inducing root development takes place in the light.

77. The method of claim 76, wherein said light is continuous.

78. The method of claim 56, further comprising cultivating a mature plant.

79. The method of claim 78, further comprising obtaining seeds from said mature plant.

80. A plant made by the method of claim 56.

81. A seed from a plant of claim 80.

82. A method for regenerating a plant, comprising:

a) providing a sample of a plant;

b) forming a callus from said sample;

c) inducing shoot development from said callus to form at least one shoot; and

d) inducing root development from said at least one shoot.

83. The method of claim 82, wherein said plant is a freshwater monocot plant.

84. The method of claim 82, wherein said freshwater monocot plant is a freshwater wetland monocot plant.

85. The method of claim 82, wherein said freshwater wetland monocot plant is a freshwater emergent wetland monocot plant.

86. The method of claim 82, wherein said plant is selected from the group consisting of *Carex*, *Scirpus*, *Juncus* and *Typha*.

87. The method of claim 82, wherein said plant is *Juncus accuminatus*.

88. The method of claim 82, wherein said sample comprises a germinated seedling.

89. The method of claim 88, wherein said germinated seedling was germinated *in vitro*.

90. The method of claim 82, wherein said forming comprises culturing said sample in the presence of at least one plant growth regulator.

91. The method of claim 90, wherein said at least one plant growth regulator comprises at least one auxin.

92. The method of claim 91, wherein said at least one auxin is selected from the group consisting of 2,4-D, picloram and NAA.

93. The method of claim 82, wherein said forming step is carried out in the dark.

94. The method of claim 93, wherein said inducing shoot development comprises culturing said callus in the presence of at least one plant growth regulator.

95. The method of claim 94, wherein said at least one plant growth regulator is at least one cytokinin.

96. The method of claim 95, wherein said at least one cytokinin is selected from the group consisting of BA, 2iP, thidiazuron and kinetin.

97. The method of claim 82, wherein said inducing shoot development takes place in the light.

98. The method of claim 97, wherein said light is continuous.

99. The method of claim 82, wherein said inducing root development comprises culturing said callus in the presence of at least one plant growth regulator.

100. The method of claim 99, wherein said at least one plant growth regulator is at least one auxin.

101. The method of claim 100, wherein said at least one auxin is selected from the group consisting of 2,4-D, picloram, and NAA.

102. The method of claim 82, wherein said inducing root development takes place in the light.

103. The method of claim 102, wherein said light is continuous.

104. The method of claim 82, further comprising cultivating a mature plant.

105. The method of claim 104, further comprising obtaining seeds from said mature plant.

106. A plant made by the method of claim 82.

107. A seed from a plant of claim 106.

108. A method for regenerating a plant or forming a somatic embryo, comprising:

1. providing a sample of a plant;
2. forming a callus from said sample; and
3. inducing the formation of a somatic embryo from said callus.

109. The method of claim 108, wherein said plant is a freshwater monocot plant.

110. The method of claim 108, wherein said freshwater monocot plant is a freshwater wetland monocot plant.

111. The method of claim 108, wherein said freshwater wetland monocot plant is a freshwater emergent wetland monocot plant.

112. The method of claim 108, wherein said plant is selected from the group consisting of *Carex*, *Scirpus*, *Juncus* and *Typha*.

113. The method of claim 108, wherein said plant is *Typha angustifolia*.

114. The method of claim 108, wherein said sample comprises a germinated seedling.

115. The method of claim 114, wherein said germinated seedling was germinated *in vitro*.

116. The method of claim 108, wherein said forming comprises culturing said sample in the presence of at least one plant growth regulator.

117. The method of claim 116, wherein said at least one plant growth regulator comprises at least one auxin.

118. The method of claim 117, wherein said at least one auxin is selected from the group consisting of 2,4-D, picloram, dicamba and NAA.

119. The method of claim 108, wherein said forming step is carried out in the dark or in the light.

120. The method of claim 108, wherein said inducing comprises culturing said callus in the presence of at least one plant growth regulator.

121. The method of claim 120, wherein said at least one plant growth regulator is at least one cytokinin.

122. The method of claim 121, wherein said at least one cytokinin is selected from the group consisting of BA, 2iP, thidiazuron and kinetin.

123. The method of claim 108, wherein said inducing takes place in the light.

124. The method of claim 123, wherein said light is continuous.

125. A plant made by the method of claim 108.

126. A seed from a plant of claim 125.

127. A method of bioremediation, comprising:

1. providing a plant made by the method of claim 34, 56, 82 or 108;
2. exposing said plant to an environment containing or suspected of containing at least one contaminant that can be reduced by said plant;

wherein the amount of said at least one contaminant in said environment is reduced.

128. A method of bioremediation, comprising:

1. providing a plant made by the method of claim 34, 56, 82 or 108;

2. exposing said plant to a sample containing or suspected of containing at least one contaminant that can be reduced by said plant;

wherein the amount of said at least one contaminant in said sample is reduced by said plant.